

JOINT MESSAGE FORM				RESERVED FOR COMMUNICATION CENTER	
Approved For Release 2002/10/31 : CIA-RDP99B00048R000100270001-8					
30 SEP 1968					
SECURITY CLASSIFICATION					
S E C R E T					
TYPE MSG	BOOK	MULTI	SINGLE		
		X			
PRECEDENCE					
ACTION ROUTINE					
INFO ROUTINE					
				DTG	
FROM: <span style="border: 1px solid black; display: inline-block; width: 200px; height: 20px;"></span>  TO: <span style="border: 1px solid black; display: inline-block; width: 200px; height: 20px;"></span>				SPECIAL INSTRUCTIONS CMDR OPS DM SECURITY	
DM-1 DM-2 DM-3 DM-4 SPO SSM <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">SCOPE CROSS</span>				<span style="border: 1px solid black; display: inline-block; width: 100px; height: 20px;"></span>	
REFERENCE: OPS ORD-3-68 ANNEX E-MATERIEL-PARAGRAPH 5B AND <span style="border: 1px solid black; display: inline-block; width: 100px; height: 20px;"></span> CITE 5645, DATED 9 SEP 1968.					
1. U-2R AIRCRAFT N816 WAS DEPLOYED FROM DET. "G" ON 16 SEP 1968 TO OL-19 TO OBTAIN ACTUAL OPERATIONAL EXPERIENCE DATA IN AN AREA OF PRECIPITATION AND HIGH HUMIDITY. THE EVALUATION PERIOD WAS SCHEDULED FOR FIVE DAYS. IT WAS NECESSARY TO EXTEND THE OPERATION THROUGH 27 SEP 1968, HOWEVER, DUE MAINLY TO LIQUID OXYGEN AND CONSTANT SPEED DRIVE PROBLEMS.					
2. REFERENCE PARAGRAPH 5B(1):  A. IN GENERAL, THE EFFECTS OF HIGH HUMIDITY ON THE AIRCRAFT, SYSTEMS AND COMPONENTS ESTABLISHED TWO DEFINITE AREAS, WHICH WERE THE AIRCRAFT FLAP SYSTEM AND LOX SYSTEMS. FAILURE OF THE FLAPS TO EXTEND ONCE UPON LANDING OF THE AIRCRAFT AND TWICE DURING GROUND MAINTENANCE OPERATIONAL CHECKS OCCURRED AT OL-19 MCCOY AFB.					
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FAILURE OF THE FLAPS TO OPERATE AT OL-19 IN ALL CASES REVEALED THE PROBLEM AREA TO BE MOISTURE INSIDE THE FLAP ASYMMETRY SWITCHES. THE ASYMMETRY SWITCHES WERE PURGED DRY UTILIZING DRY NITROGEN AFTER WHICH THEY WOULD OPERATE NORMALLY. THE VENT DRAIN HOLES IN THE ASYMMETRY SWITCHES WERE TAPED CLOSED AFTER THE DRY PURGE. HOWEVER, THIS DID NOT CORRECT OR PREVENT MOISTURE FROM OCCURRING WITHIN THE ASYMMETRY SWITCHES.

B. THE AIRCRAFT LOX SYSTEMS PRESENTED WHAT APPEARED TO BE A SERIOUS SAFETY-OF-FLIGHT HAZARD AFTER ARRIVAL OF THE U-2R AIRCRAFT AT OL-19, AND THE FIRST SCHEDULED MISSION WAS ABORTED. THE DIFFICULTIES ENCOUNTERED WERE CONSIDERED TO BE BEYOND THE SCOPE OF THE TECHNICAL PERSONNEL ASSIGNED TO SCOPE CROSS, CONSEQUENTLY ENGINEERING ASSISTANCE WAS REQUESTED. AN ENGINEERING TEAM ARRIVED AT OL-19 FROM LAC TO REVIEW THE LOX PROBLEMS AND RECOMMEND THE CORRECTIVE ACTION TO BE TAKEN TO COMPLETE THE SCOPE CROSS DEPLOYMENT. FURTHER STUDY INTO THE AIRCRAFT LOX SYSTEM IS BEING ACCOMPLISHED BY LAC, AND FINDINGS OF THE STUDY WILL BE SUBMITTED BY LAC.

CONTROL NO.	TOR/TOD	PAGE NO.	NO. OF PAGES	MESSAGE IDENTIFICATION	INITIALS
		2	7		

REGRADING INSTRUCTIONS Approved For Release 2002/10/31 : CIA-RDP99B00848R000100270001-8

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SECURITY CLASSIFICATION

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ACTION ROUTINE			25X1A
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C. MALFUNCTIONS OCCURRED IN THE CONSTANT SPEED DRIVE/AC GENERATOR, HYDRAULIC, AUTOPILOT AND AVIONICS SYSTEMS. THESE MALFUNCTIONS WERE NOT ATTRIBUTED TO PRECIPITATION OR HIGH HUMIDITY WHICH EXISTED AT OL-19. THE TWO CONSTANT SPEED DRIVE FAILURES AND AUTOPILOT MALFUNCTIONS ARE BEING STUDIED BY THE CONTRACTOR, AND ADDITIONAL INFORMATION WILL BE FURNISHED BY LAC.

D. THE B-2 CONFIGURATION OPERATED NORMALLY ON BOTH SORTIES AFTER SUBJECTED TO PROLONGED EXPOSURE OF BOTH THE UNIT AND FILM TO A HIGH HUMID ENVIRONMENT. DURING THE ENTIRE EXERCISE THE UNIT WAS STORED IN EITHER THE HANGAR OR THE Q-BAY OF THE AIRCRAFT.

3. REFERENCE PARAGRAPH 5B(2): THE AIR CONDITIONING/PRESSURIZATION SYSTEM APPEARED TO FUNCTION SATISFACTORILY DURING THE EVALUATION PERIOD. DEFOGGING WAS ACCOMPLISHED ON THE GROUND AND IN FLIGHT WITH THE PILOTS REPORTING EXCELLENT RESULTS.

4. REFERENCE PARAGRAPH 5B(3): FUEL TANK CONDENSATION WAS NOT EXPERIENCED EMPLOYING THE PROCEDURES AS STATED HEREIN. TO INSURE QUALITY CONTROL OF THE JPTS FUEL UTILIZED AT MCCOY AFB, DAILY FUEL SAMPLES WERE TAKEN FROM EACH OF THE FOUR WING TANKS AND FUEL SUMP OF THE AIRCRAFT.

CONTROL NO.	TOR/TOD	PAGE NO.	NO OF PAGES	MESSAGE IDENTIFICATION	INITIALS
		3	7		
REGRADING INSTRUCTIONS				SECURITY CLASSIFICATION	
Approved For Release 2002/10/31 : CIA-RDP99B00048R000100270001-8					

ABBREVIATED INT MESSAGEFORM Approved For Release 2002/10/31 : CIA-RDP99B00048R000100270001-8 and/or CONTINUATION SHEET		SECURITY CLASSIFICATION SECRET
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ACTION ROUTINE			
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IN ADDITION, THE JPTS REFUELER AT THE TIME OF SERVICING WAS ALSO SAMPLED. FUEL SAMPLES WERE VISUALLY INSPECTED FOR ANY FOREIGN SOLID CONTAMINANTS, FREE WATER, AND COLOR CHANGE. AFTER THE VISUAL INSPECTION, A CAPSULE (ESSO HYDRO-KIT) WAS DROPPED INTO EACH OF THE STERILE SAMPLE JARS, AND THE FUEL SAMPLE SHAKEN FOR APPROXIMATELY 10 SECONDS. IF ANY FREE OR ENTRAINED WATER ABOVE 30 P.P.M. (PARTS PER MILLION) EXISTED IN THE FUEL, THERE WOULD BE AN UNMISTAKEABLE COLOR CHANGE IN THE FUEL SAMPLE. HOWEVER, AT NO TIME DURING THE SAMPLING WAS THERE ANY INDICATION OF FREE, ENTRAINED WATER OR CONTAMINANTS DISCOVERED IN THE FUEL. ALSO, A MILLIPORE TEST WAS PERFORMED ON THE REFUELER TO CHECK FOR THE PRESENCE OF SOLIDS. THE ALLOWANCE IS NO MORE THAN 8 MILLIGRAMS PER GALLON. THE JPTS FUEL UTILIZED MET THE MINIMUM STANDARDS REQUIRED.

5. REFERENCE PARAGRAPH 5B(4): NO AIRCRAFT INSTRUMENT FOGGING WAS DISCOVERED OR REPORTED BY THE PILOTS DURING THE EVALUATION PERIOD.

6. REFERENCE PARAGRAPH 5B(5): RESULTS OF THE LIQUID OXYGEN SYSTEM STUDY BEING ACCOMPLISHED BY LAC WILL BE FURNISHED XX TO HEADQUARTERS AFTER COMPLETION OF THE STUDY.

CONTROL NO	TOR/TOD	PAGE NO 4	NO OF PAGES 7	MESSAGE IDENTIFICATION	INITIALS
REGRADING INSTRUCTIONS Approved For Release 2002/10/31 : CIA-RDP99B00048R000100270001-8				SECURITY CLASSIFICATION SECRET	

ABBREVIATED JOINT MESSAGEFORM Approved For Release 2002/10/31 : CIA-RDP99B00048R000100270001-8				SECURITY CLASSIFICATION	
PRECEDENCE		RELEASED BY		DRAFTED BY	
ACTION ROUTINE		[REDACTED]		PHONE	
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<p>7. REFERENCE PARAGRAPH 5B(6): THE PITOT-STATIC SYSTEM FUNCTIONED SATISFACTORILY, AND NO PROBLEMS WERE ENCOUNTERED.</p> <p>8. REFERENCE PARAGRAPH 5B(7): EFFECTIVENESS OF THE RAIN/MOISTURE SEALS FOR FUSELAGE PANELS APPEARED TO BE SATISFACTORY AFTER FLYING AND LANDING DURING A RAINSTORM AT OL-19. AFTER ENGINE SHUTDOWN NO EXCESSIVE DRAINAGE OF WATER FROM THE AIRCRAFT WAS OBSERVED.</p> <p>9. REFERENCE PARAGRAPH 5B(8): NO FOGGING OF THE DRIFT SIGHT WAS EXPERIENCED OR REPORTED BY THE PILOT. AFTER COMPLETION OF MISSION GT 68-427/24 SEP 1968, THE PILOT REPORTED AT DEBRIEFING THAT THE DRIFT SIGHT APPEARED TO HAVE ICE DROPLETS ON EITHER SIDE OF THE DRIFTSIGHT DOME. TRACES OF WATER SPOTS WERE DETECTED ON THE DOME AFTER LANDING WHICH COULD HAVE BEEN ICE DROPLETS IN THE AIR.</p> <p>10. REFERENCE PARAGRAPH 5B(9): NO STALL STRIP ICING WAS EXPERIENCED IN FLIGHT OR UPON LANDING DURING THE EVALUATION PERIOD. THE STALL STRIPS WERE ACTIVATED ON EACH MISSION ONE HOUR AFTER LEVEL-OFF AT ALTITUDE AND AGAIN AT APPROXIMATELY 20,000 FEET. OPERATION OF THE STALL STRIP WAS CONSIDERED TO BE SATISFACTORY.</p>					
CONTROL NO.		TOR/TOD		MESSAGE IDENTIFICATION	
PAGE NO.		NO. OF PAGES		INITIALS	
5		7			
REGRADING INSTRUCTIONS				SECURITY CLASSIFICATION	
Approved For Release 2002/10/31 : CIA-RDP99B00048R000100270001-8					

ABBREVIATED JOINT MESSAGEFORM Approved For Release 2002/10/31 : CIA-RDP99B00048R00010027000198 and/or CONTINUATION SHEET		SECURITY CLASSIFICATION	
PRECEDENCE	RELEASED BY	DRAFTED BY	PHONE
ACTION ROUTINE			
INFO ROUTINE			

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11. REFERENCE PARAGRAPH 5A(3): THE TMU-27M LOX CART WAS TRANSPORTED ABOARD THE C-130 AIRCRAFT ALONG WITH THE OTHER AGE ITEMS OF SUPPORT TO OBTAIN DEPLOYMENT TRAINING IN THE HANDLING OF THE LOX CART. THE LOX CART VENT LINE WAS CONNECTED TO THE AIRCRAFT OVERBOARD VENT HOSE WHICH PERMITS VENTING OF ANY EXCESS BUILDUP OF LOX PRESSURE WITHIN THE LOX CART IF REQUIRED DURING FLIGHT. THE VENT VALVE ON THE LOX CART WAS PLACED IN THE OPEN VENT POSITION TILL THE AIRCRAFT WAS READY FOR TAKEOFF. THE VENT VALVE WAS CLOSED DURING FLIGHT AND LOX PRESSURE BUILDUP MONITORED AT 15 MINUTE INTERVALS DURING THE FIRST HOUR OF FLIGHT. THE SECOND HOUR OF FLIGHT THE LOX PRESSURE WAS MONITORED AT 20 MINUTE INTERVALS. DURING THE REMAINDER OF THE FLIGHT THE LOX CART WAS MONITORED AT ONE HOUR INTERVALS. THIS PROCEDURE WAS EMPLOYED DURING THE DEPLOYMENT TO AND FROM MCCOY AFB. NO PROBLEMS WERE ENCOUNTERED DURING THE DEPLOYMENT UTILIZING THE ABOVE PROCEDURES. AFTER EACH REFILLING OF THE LOX CART AT MCCOY AFB, A SAMPLE WAS OBTAINED FROM THE LOX CART TO PERFORM A PURITY AND SNIFF TEST. ALL TESTS PERFORMED MET THE ALLOWABLE LOX SPECIFICATIONS.

CONTROL NO.	TOR/TOD	PAGE NO. 6	NO OF PAGES 7	MESSAGE IDENTIFICATION	INITIALS
REGRADING INSTRUCTIONS				SECURITY CLASSIFICATION	
Approved For Release 2002/10/31 : CIA-RDP99B00048R00010027000198					

ABBREVIATED JOINT MESSAGEFORM

Approved For Release 2002/10/31 : CIA-RDP99B00048R000100270001-8

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PRECEDENCE	RELEASED BY	DRAFTED BY	PHONE
ACTION ROUTINE			25X1A
INFO ROUTINE			

## 12. CONCLUSIONS:

A. SCOPE CROSS DEPLOYMENT WAS A PROFITABLE OPERATION.

B. THE MAINTENANCE PERSONNEL GAINED INVALUABLE KNOWLEDGE AND TECHNIQUES IN MAINTAINING THE U-2R IN AN AREA OF HIGH HUMIDITY AND PRECIPITATION.

C. THE U-2R WHEN EMPLOYED FOR EXTENDED PERIODS UNDER SIMILAR ENVIRONMENTAL CONDITIONS WILL UNDOUBTEDLY REVEAL ADDITIONAL PRECAUTIONS REQUIRED TO MAINTAIN AN O/R STATUS.

END OF MESSAGE

CONTROL NO.	TOR/TOD	PAGE NO.	NO. OF PAGES	MESSAGE IDENTIFICATION	INITIALS
		7	7		
REGRADING INSTRUCTIONS				SECURITY CLASSIFICATION	
Approved For Release 2002/10/31 : CIA-RDP99B00048R000100270001-8					